

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Currently amended) A crack-resistant printing paper or board comprising a pre-formed cellulose fiber network web; and a polymer material impregnated into the web in thin discontinuous geometrical formations to define a plurality of discrete areas of said polymer material distributed over said web and forming spaced crack-arresting islands that impede crack propagation in said web; said polymer material penetrating into said web so that the ~~form a uniform~~ paper or board has a uniform surface, wherein the polymer material is no more than 5% of the basis weight of the paper or board.

2. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the polymer material is a thermoplastic or thermoset material.

3. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the geometrical formations are rectangular stripes, equi-distant circles or diamond-shape formations.

4. (Cancelled)

5. (Cancelled)

6. (Original) The crack-resistant paper or board as claimed in Claim 1, wherein the polymer is selected from the group consisting of a latex blend, an acrylic polymer, a polyester resin and a liquid crystalline polymer.

7. (Cancelled)

8. (Currently amended) The crack-resistant paper or board as claimed in Claim 1, wherein ~~the paper or board has a~~ subsequent distinct polymer material is coated on a surface of the paper or board.

9-17. (Cancelled)

18. (Currently Amended) A crack-resistant printing paper or board comprising a cellulose fiber network web; and a thin film of a ~~discontinuous~~ polymer material deposited onto ~~impregnated into~~ the web in discontinuous geometrical formations to form a plurality of discrete areas distributed over said web that are impregnated with said polymer material and form spaced crack-arresting islands that impede crack propagation in said web; said polymer material penetrating into said web so that the ~~a-uniform~~ paper or board has a uniform surface, wherein the polymer is selected from the group consisting of polybutadiene, acrylonitrile-butadiene, ethylene vinyl acetate-butadiene, polyhydroxybutyrate-butyrate and a cellulose acetate butyrate, wherein the polymer material is no more than 5% of the basis weight of the paper or board.

19. (Cancelled)

20. (Previously presented) The crack-resistant paper or board as claimed in Claim 1 wherein the polymer is selected from the group consisting of diene-based rubber, acrylics, latex blends, polyesters and any combination thereof.

21. (Previously presented) The crack-resistant paper or board as claimed in Claim 1 wherein said fibers are pulp fibers.

22. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are rectangular stripes.

23. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are equi-distant circles.

24. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are diamond-shape formations.

25. (Currently Amended) A crack-resistant paper or board consisting essentially of a cellulose fiber network web; and a thin layer of a polymer material impregnated in the web in discontinuous geometrical formations to define a plurality of discrete areas distributed over said web that are impregnated with said polymer material and form spaced crack-arresting islands that impede crack propagation in said web, wherein the polymer material is no more than 5% of the basis weight of the paper or board.

26. (Previously presented) The crack-resistant paper or board as claimed in Claim 25, wherein the polymer material is a thermoplastic or thermoset material.

27. (Previously presented) The crack-resistant paper or board as claimed in Claim 25, wherein the geometrical formations are rectangular stripes, equi-distant circles or diamond-shape formations.

28. (Cancelled)

29. (Previously presented) The crack-resistant paper or board as claimed in Claim 25, wherein the polymer is selected from the group consisting of a latex blend, an acrylic polymer, a polyester resin and a liquid crystalline polymer.

30. (Cancelled)

31. (Currently amended) The crack-resistant paper or board as claimed in Claim 25, wherein ~~the paper or board has a~~ subsequent distinct polymer material is coated on a surface of the paper or board.

32. (Previously presented) The crack-resistant paper or board as claimed in Claim 25 wherein the polymer is selected from the group consisting of diene-based rubber, acrylics, latex blends, polyesters and any combination thereof.

33. (Previously presented) The crack-resistant paper or board as claimed in Claim 25 wherein said fibers are pulp fibers.

34. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are rectangular stripes.

35. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are equi-distant circles.

36. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are diamond-shape formations.

37. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the paper or board is calendered.

38. (Previously presented) The crack-resistant paper or board as claimed in Claim 18, wherein the paper or board is calendered.

39. (Currently amended) The crack-resistant paper or board as claimed in Claim 18, wherein ~~the paper or board has a~~ subsequent distinct polymer material is coated on a surface of the paper or board.

40. (Previously presented) The crack-resistant paper or board as claimed in Claim 39, wherein the coated surface of the paper or board comprises print.

41. (Previously presented) The crack-resistant paper or board as claimed in Claim 31, wherein the coated surface of the paper or board comprises print.

42. (Previously presented) The crack-resistant paper or board as claimed in Claim 8, wherein the coated surface of the paper or board comprises print.

43. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the cellulose fiber network web comprises pulp fibers.

44. (New) A crack-resistant paper or board comprising:
a pre-formed web of cellulose fibers;
a thin film of polymer material deposited onto said web in a discontinuous geometric pattern and impregnated into said web to form a plurality of spaced apart discrete areas distributed over said web, said polymer-impregnated areas forming crack-arresting islands that impede crack propagation and fracturing in said web without adversely affecting the modulus of elasticity and tensile strength of the paper or board; and
said polymer material penetrating into said web to form a substantially uniform flush surface for subsequent treatment such as coating and printing.